

ABSTRACT

Disclosed is a magnetic field sensor of high sensitivity, and which is power-saving and can be manufactured with low cost in a very small size. The magnetic field sensor includes a soft magnetic core formed to construct a closed-magnetic circuit on a semiconductor substrate, a magnetic field sensing coil formed by a metal film in a shape that winds the soft magnetic core, and a drive line for exciting the soft magnetic core by directly applying an electric current thereto. The drive line is formed in a rectangular angle to the magnetic field sensing coil, and connected to the both ends of the soft magnetic core in a length direction.